

## Before RED, Before PURPLE – The Earliest Japanese Diplomatic Traffic September 6

It is now well known that the U.S. Army's cryptologic organization solved Japanese diplomatic cryptographic systems in the 1930s and after, including the sophisticated machine-generated system the Americans called "PURPLE." The information gleaned from exploiting these systems worldwide was useful in the period before World War II began, but became crucial during the war because the U.S. and Britain were exploiting the communications of the Japanese ambassador in Berlin.

Less well-known today is the fact that the U.S. Navy cryptologic organization solved several non-machine-generated Japanese diplomatic cryptosystems in the 1920s. When the United States entered World War II, the Navy focused its cryptanalytic efforts on Japanese naval targets exclusively, but prior to that time, it worked on a variety of countries and some non-naval systems.

In January 1926, personnel in the U.S. Navy's small research office noticed a new cipher used by Japanese consular and diplomatic representatives overseas for short messages broadcast to the Foreign Ministry in Tokyo. Three analysts -- Joseph Rochefort, Agnes Driscoll, and Ellis Zacharias -- examined the system. They designated the system "LA," based on the indicator found in the message series. At first, they assumed this was simply a retransmission of messages from a system they already had solved, but some tests showed LA was an entirely different system.



*Joseph Rochefort*



*Agnes Myer Driscoll*



*Ellis Zacharias*

Based on further examination, the analysts made the correct assumption that the LA system was based on a table, with values arranged either alphabetically or diagonally, similar to systems they already were familiar with. The table, they eventually found, had Japanese kana characters, frequently used Chinese characters, numerals, spelling indicators, some Roman letters, and a few common expressions.

The LA system was solved in three weeks, with 60 messages on hand.

Most of the decrypted and translated messages gave just a headline-style note about events in the unification of China; probably this was advance notification of detailed reports that would be sent later by pouch. The last Chinese dynasty had fallen in 1911, and the country had broken into regional states, each ruled by a “warlord.” The Japanese messages headlined events as General Chiang Kai-shek sought to unify the country under his leadership and that of his political party, the Guomindang (sometimes known in the West as the “Nationalists”). The Navy analysts did not know if the LA system was used elsewhere, but since most U.S. Navy intercept sites were in the China and Pacific regions, the intercept on hand was exclusively from that geographic area.

Joseph Rochefort and Agnes Driscoll have been inducted into the Cryptologic Hall of Honor; Ellis Zacharias became a major figure in U.S. Navy Intelligence during the war and the early years after.

SOURCE: an unsigned 1928 report most likely written either by Joseph Rochefort or Ellis Zacharias.

502 caption: portrait shots of Joseph Rochefort and Agnes Driscoll; a shot of Ellis Zacharias on board ship, with a pair of binoculars in his hand.